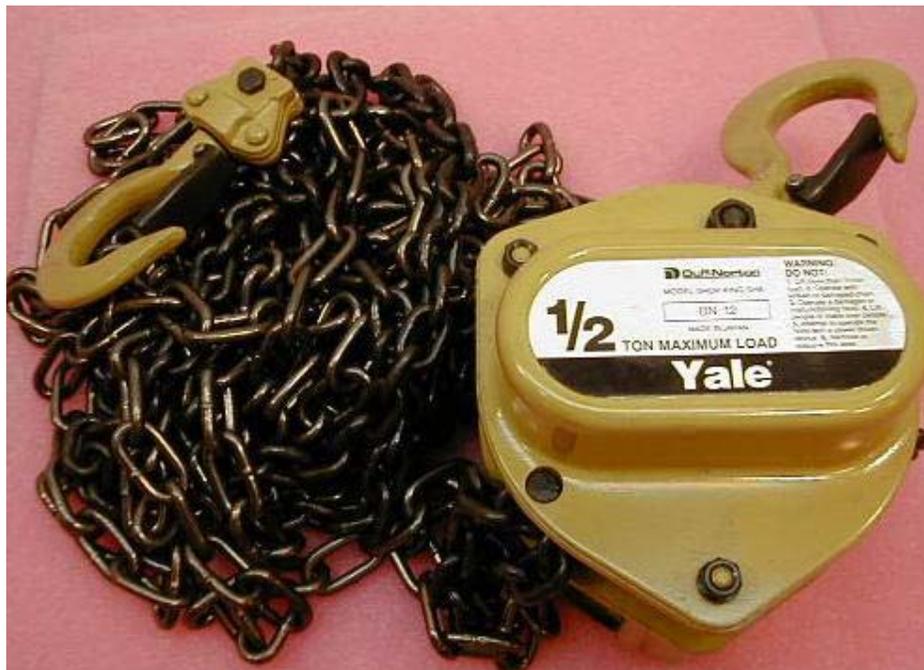


NEXRAD CRANES/HOISTS, TYPES AND USES  
Updated February 24, 2009

NEXRAD technicians use several types of hoist assemblies to maintain the system on a routine basis. The hoists are distinct, have separate functions, and are described below.

**The first hoist assembly** is the chain fall hoist, **Figure 1.** (SERD 5) (P/N SH-10) assembly used in the RDA Shelter. Its primary purpose is to lift heavy transmitter components (oil tank, klystron, or focus coil) in and out of the transmitter cabinet. Hoist inserts and eye bolts are built in the shelter ceiling in front of each UD3 or UD103 Transmitter Cabinet. When not in use, the chain hoist is stored away. The chain fall hoist assembly has a half ton (1000 lb) capacity with a 10 foot chain; however, due to the RDA Shelter ceiling constraints, the load capacity is limited to 500 pounds. There is a **Caution** label near the ceiling eye bolt with the 500 pound weight limit. Therefore, the Oil Tank, Klystron and Focus Coil should never be lifted as one unit. Technical Manual NWS EHB 6-511, Dated 15 January 2008, paragraph 5.3.25 describes the procedure for removing the transmitter klystron and focus coil assemblies from the oil tank, using the chain fall hoist. Specifically, paragraphs 5.3.25.3.2, 5.3.25.3.3, and 5.3.25.3.4 describe the removal and paragraphs 5.3.25.4.1, 5.3.25.4.2, and 5.3.25.4.3 describe the installation of the klystron, focus coil, or oil tank assembly. Figures FO11-21, FO11-22, and FO 11-23 depict drawings on the removal and installation of the klystron and focus coil assemblies, respectfully. The preventive maintenance procedure for the chain fall hoist is in NWS EHB 6-511, Revision 3, dated 15 January 2008. The manual will describe the preventive maintenance procedure and cautions that it should be checked with a light load for proper function after it has been inspected or repaired. Maintenance of this hoist is accomplished just prior to its use. This hoist does not require certification based on OSHA Regulation 1915.114(b). Please see the ROC Web site for a copy of this paragraph.



**Figure 1. Chain Fall Hoist**

**The second hoist assembly** is the Outrigger Hoist, **Figure 2.** (SERD 66) (steel gray in color, P/N 4214-2262, 100 pound capacity) used for lifting the Radome Davit Crane (SERD 6) (red in color) to the top of the pedestal. This hoist can also be used for a number of maintenance functions, such as, replacement of the elevation drive motor or elevation rotary joint. Technical Manual NWS EHB 6-503-2 Preventive Maintenance Inspection Work Cards, Card 2-039 describes the annual preventive maintenance procedures.



**Figure 2. Outrigger Crane**

**The third hoist assembly, Radome Davit Crane, Figure 3.** (SERD 6) (red in color, P/N 1213760-201 or SD1984 REVB), is made of heavy gauge steel and has a 400 lb load limit. The purpose of the Radome Davit Crane is to be a backup for the electric hoist (described below) and for depot level maintenance within the radome. Prior to the introduction of the electric hoist (described below), this crane was also used to lift material from the ground to the Radome floor, which can be from 15 feet to 90 feet, depending on tower height. Technical Manual NWS EHB 6-517, page A-1, describes the Davit Crane as 3" O.D. (outside diameter) with 400 pound capacity. A sticker on the hoist assembly states the load rating is 400 pound (181 kg). For Depot level maintenance, the Davit Crane is mounted in the Elevation Housing and is required to lift or lower the elevation and azimuth gearboxes and the elevation bearing due to their weight during a removal and replacement operation. The installation and replacement procedures are described in Technical Manual NWS 6-517, for Full Scale Pedestal production sites see paragraphs 4.2.10.2 and 4.2.10.3 and for Limited Production Pedestals, see paragraphs 4.3.8.2 and 4.3.8.3. Figures 4-17 and 4-22 depict drawings of Davit Crane tube locations and eye bolts. Technical Manual NWS EHB 6-503-2 Preventive Maintenance Inspection Work Cards, Card 2-039 describes the annual preventive maintenance procedures. The Thorn certification letter for this Crane is on the ROC Web page.



**Figure 3. Radome Davit Crane**

**The fourth hoist assembly** is the Electric Hoist (SERD 110). (FAA uses a Thern which is red in color, P/N 5123, **Figure 4.** and the NWS/DOD uses one made by Allied Power Products Inc. It is NOAA blue in color, P/N 2A7395, **Figure 5.**) The only purpose of the Electric Hoist is to lift material from the ground to the Radome floor, which can be from 15 feet to 90 feet, depending on tower height, and for depot level maintenance. Technical Manual NWS EHB 6-503-2 Preventive Maintenance Inspection Work Cards, Card 2-039 describes the annual preventive maintenance procedures. The Allied Power Products Inc. certification letter for the NWS/DOD hoist is contained in this section of the ROC Web page.

Again, we want to remind each technician that there is an annual PMI to inspect and lubricate each hoist/crane. The annual PMI is contained in technical Manual NWS EHB 6-503-2 Preventive Maintenance Inspection Work Cards, Card 2-039.



**Figure 4. FAA Electric Hoist**



**Figure 5. NWS-DOD Electric Hoist**